

do not contain true green chlorophyll, such as the Phycobromaceæ, Diatomaceæ, Fucaceæ and Florideæ. Starch and oil appear to be reserve substances produced by the oxidization of the hypochlorin caused by light, it being the most readily oxidizable constituent of the cell, more so even than chlorophyll itself.

That the hypochlorin—present in variable quantity in every chlorophyll grain under normal circumstances—is subject to continual increase and decrease, may be proved without difficulty. All comparative observations on chlorophyll grains in younger and in older conditions, point unmistakably to the conclusion that the collection and increase of the starch enclosed in the ground substance of the chlorophyll, goes on *pari passu* with the decrease of the hypochlorin. In dark, the hypochlorin, which does not take any direct part in transport of food materials, is more permanent than starch; and this fact again is in agreement with the conclusion that its transformation in the cell into more highly oxidized bodies is hindered by the increased respiration in light.

In the facts here detailed, and the conclusions derived from them, Dr. Pringsheim believes that an entirely new light is thrown on the cause of the well-known fact that assimilation takes place only in those cells of the plant which contain chlorophyll. This substance acts universally as a moderator of respiration by its absorptive influence on light, and hence allows the opposite phenomena of respiration and elimination of carbon dioxide to go on in those cells which contain it. A more detailed account of the experiments and results is promised by the author in a future paper.—ALFRED W. BENNETT, in *Am. Naturalist*.

PTERIS AQUILINA, VAR. CAUDATA, AGAIN.—Since my note in the GAZETTE on the huge specimen of this species sent from Florida, I have received the following note from Mr. White: "In compliance with your request I measured a *Pteris* as follows: Stipe 6 ft.; first pair of divisions abortive; second pair 8 ft. from ground, and each division 5 ft. (making a spread of 10 ft., G. E. D.); third pair, spread 8 ft. and the next pair 6 ft.: total height 14½ ft. The primary divisions were 2 ft. apart until the last mentioned pair which were 1½ ft., making a spread of 6 ft. at a height of 11½ ft. from the ground. Almost aborescent, eh?"

It will be seen from this that I probably underestimated the breadth of the specimen which I described, and that the dimensions of the specimens measured by Mr. White exceed anything heretofore recorded anywhere.—GEO. E. DAVENPORT.

AMERICAN MONTHLY MICROSCOPICAL JOURNAL.—This a continuation of the *Quarterly* and is worthy the support of all interested in the work of the microscope. It is a journal of 20 pages, is illustrated, and costs but one dollar per year. The name of the editor, Romyne Hitchcock, gives an assurance of careful, conscientious work.